

Heartbeat 911

Structured Military Messaging



- 1
- CAP .mil domain
- CAP .org domain
- CAP .com domain
- CAP .other domains

SA



Alerts



ESB

Biztalk / BREW
Cold Fusion
Groove
EAI
ERP
Dbase...

SIP

IM Gateways

Agents/
"bots"

Simple
Object
Access
Protocol

Bridge

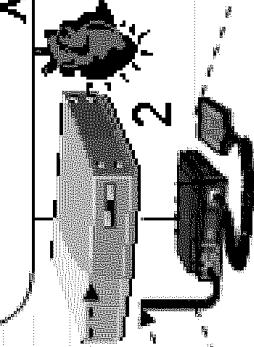
eXtensible Message and Presence Protocol
XML Control Protocol (XCP)

JXTA

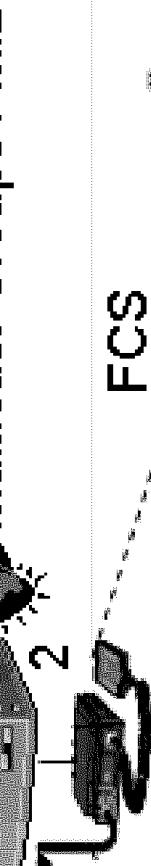
PDP, PIP, PBP, ERP, RVP

RFID

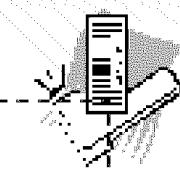
Portable Devices



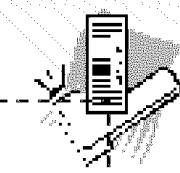
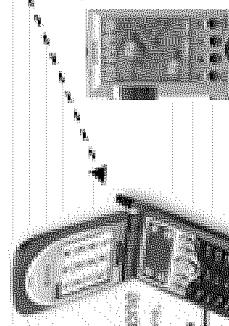
XML (content) Routing



Multicast Groups / MIB



FCS



TCP/IP "heartbeat"
= send to / get from
& timing

3 CAP: Common Alert Protocol

- CAP .mil domain

- CAP .org domain

- CAP .com domain

- CAP .other domains

SA
Warnings

SIP

IM Gateways

Jabber / XMPP

eXtensible Message and Presence Protocol
XML Control Protocol (XCP)

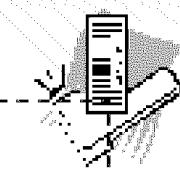
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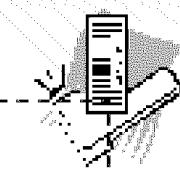
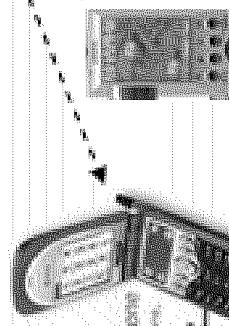
XML (content) Routing



Multicast Groups / MIB



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Military // Homeland Defense	Department of Homeland Security, .com .org
Well-known multicast groups	Subscription service providers for the .com, .org, or by corporate domains maintaining well known multicast groups on a subscription basis
Doctrinal multicast groups	Groups by domain segment or by formal agreement (e.g., transportation, security, SAFECOM users by type etc) maintained by federally funded organizations
Moving unit, gaining unit (of action), platform	Platform or user / handoff subscriber node
Command Relationship (OPCON, ATTACH), Unit of Action, Unit of Employment	Heartbeat 911 subscriber service, primary provider, affiliate provider, if roaming
The Effective Date/Time/Group (DTG) Block	Date / Time adjusted for Daylight Savings, world time zones
The Synchronization Delta Time Block	Time when moving or traveling group executes network changes that change data distribution routes in supporting routers
The UTR (R = reorganization) command is broadcast to the entire net / subnet for execution	UTR = Unit Task Reorganization – message sent that contains data changing router Management Information Bases (MIBS) that change participation in multicast groups subscriptions reflecting organization structure
Affected platforms belonging to the Moving Unit execute as per the Effective DTG.	Service providers router multi-cast groups change given organizational changes, user movements, pre-set time limits or intervals
All others not affected execute at Synchronization Delta Time	Agreed upon time frame e.g., 15 minutes or 15 days etc where message containing information needed to configure router MIB
The Heart Beat process incorporates the UTR command into the periodic Heart Beat message. This then becomes the process by which "stragglers" maintain configuration synchronization	"Stragglers" = RFID tagged package that did not ship from known point or traveler that missed a way point check in or service subscriber missing an agreed upon entry or pattern of entry becomes erratic = agreed upon rules
Task organization of the tactical internet Planning on when and what to change is critical	Changing major network configurations based upon major events (Olympics), or (anticipating) major movements of subscribers (natural, manmade disasters), major corporate meeting
EPLRS network configuration (if moving to a new BN or BDE (EPLRS is a GPS receiver/radio in widespread use))	Changes to supporting radio (e.g., SAFECOM) networks. Corresponds to a GPS card equipped device like a smart phone
SA CSMA server rank (Collision Sense Multiple Access = router enforced)	Subscriber priority, subscription levels as enforced by Service Level Agreements (SLA)

Figure 2 – Unit Task Order Translation